This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for producing a compound of the formula $LiMPO_4$, comprising:

a. producing a precursor mixture containing at least one Li^+ source, at least one M^{2+} source and at least one PO_4^{3-} source, wherein M comprises at least one metal from the first transition series; ~~in order to form~~forming a precipitate and thereby to produce a precursor mixture or suspension;

b. dispersing or milling the precursor mixture or suspension of (a) until the D90 value of particles in a precipitate of the precursor mixture or suspension are less than 50μm; and

c. obtaining $LiMPO_4$ from the precursor mixture or suspension of (b) by reaction under hydrothermal conditions.

2. (Previously Presented) The process according to claim 1, wherein the D90 value of the particles is at most 25μm.

3. (Previously Presented) The process according to claim 1, wherein M comprises Fe.

4. (Currently Amended) The process according to claim 1, wherein M is ~~selected from~~ Fe, Mn, Co, ~~and~~ Ni ~~and~~or mixtures thereof.

5. (Previously Presented) The process according to claim 1, wherein the $LiMPO_4$ is in pure-phase form.

6. (Previously Presented) The process according to claim 1, wherein the dispersing or milling begins before or during precipitation of the particles in the precursor mixture or suspension and is continued until the precipitation has concluded.

7. (Canceled)

8. (Previously Presented) The process according to claim 1, wherein evaporation does not occur prior to the reaction of the precursor mixture or suspension under hydrothermal conditions.

9. (Previously Presented) The process according to claim 1, wherein sintering does not take place prior to the reaction of the precursor mixture or suspension under hydrothermal conditions.

10. (Previously Presented) The process according to claim 1, wherein the $LiMPO_4$ is dried following the reaction under hydrothermal conditions.

11. (Previously Presented) The process according to claim 1, wherein the production of the precursor mixture or suspension or the reaction under hydrothermal conditions takes place in the presence of at least one further component that is a carbon-containing substance, an electron-conducting substance, the precursor of the electron-conducting substance, or mixtures thereof.

12. (Previously Presented) The process according to claim 11, wherein the electron-conducting substance is conductive carbon, carbon fibers or mixtures thereof.

13. (Previously Presented) The process according to claim 11, wherein the precursor of the electron-conducting substance comprises a sugar compound.

14. (Previously Presented) The process according to claim 1, wherein the Li^+ source is LiOH, Li_2CO_3 or mixtures thereof.

15. (Currently Amended) The process according to claim 1, wherein the Fe^{2+} source is ~~selected from~~ $FeSO_4$, $FeCl_2$, $FeNO_3$, $Fe_3(PO_4)_2$, an organyl salt of iron ~~and~~or mixtures thereof.

16. (Currently Amended) The process according to claim 1, wherein the PO_4^{3-} source is ~~selected from~~ phosphoric acid, a metal phosphate, hydrogen phosphate, dihydrogen phosphate ~~and~~or mixtures thereof.

17. (Previously Presented) The process according to claim 1 wherein water is a solvent for the precursor mixture or suspension.

18. (Previously Presented) The process according to claim 1, wherein the Li^+ source and the M^{2+} source are in the form of aqueous solutions, and the PO_3^{3-} source is in the form of a liquid or an aqueous solution.

19. (Previously Presented) The process according to claim 1, wherein the precipitate formed comprises at least one precursor of $LiMPO_4$.

20. (Previously Presented) The process according to claim 1, wherein the hydrothermal conditions comprise a temperatures between 100 and 250°C, and a pressure from 1 bar to 40 bar.

21. (Previously Presented) The process according to claim 1, wherein the components of the precursor mixture or suspension are present in a stoichiometric ratio of: a. 1 mole Fe^{2+}:1 mole PO_4^{3-}:1 mole Li*,
b. 1 mole
Fe^{2+}:1 mole PO_4^{3-}:3 mole Li*, or
c. any mixing ratio between a. and b.

22. (Previously Presented) The process according to claim 1, wherein the reaction under hydrothermal conditions takes place under an inert gas atmosphere.

23. (Previously Presented) The process according to claim 1, wherein the M^{2+} source and the PO_4^{3-} source are first mixed in an aqueous solvent under an inert gas atmosphere, followed by the addition of the Li^+ source under a protective gas or inert atmosphere, and then the reaction under hydrothermal conditions is carried out.

24. (Currently Amended) The process according to claim 1, wherein the dispersing or milling comprises a treatment with ~~a~~ dispersing apparatuses ~~from~~ that are stirrers, mills, intensive mixers, centrifugal pumps, in-line mixtures, mixing nozzles, ~~such as~~ injector nozzles, ultrasound appliances or combinations thereof.

25. (Previously Presented) The process according to claim 1, wherein a stirring mechanism is used for the dispersing or milling conducted along with the introduction of power, calculated according to the formula $P=2\ \Pi\ n\ M$, where M represents the torque and n represents the rotational speed, being at least 5 kW/m^3.

26. (Previously Presented) The process according to claim 11, wherein the further component is used as a crystallization nucleus in the precursor mixture or solution.

27. (Canceled)

28. (Previously Presented) The process of claim 1, wherein the $LiMPO_4$ has a mean particle size, D50 value of less than 0.8μm.

29. (Previously Presented) The process of claim 1, wherein the D10 value of the particles is less than 0.4μm and the D90 value is less than 3.0μm.

30. (Currently Amended) The process of claim ~~29~~1, wherein the difference between the D90 value and the D10 value of the particles is no more than 2μm.

31. (Previously Presented) The process of claim 1, wherein the BET surface area of the particles is more than $3.5m^2/g$.

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Previously Presented) The process according to claim 1, wherein the $LiMPO_4$, after the hydrothermal treatment is separated off by filtration or centrifuging, is dried and deagglomerated.

37. (Currently Amended) The process according to claim 1, wherein the $LiMPO_4$, obtained from the hydrothermal treatment is mixed with at least one carbon precursor material, ~~such as sugar or cellulose,~~ by kneading.

38. (Previously Presented) The process according to claim 37, wherein the mixed material produced is dried and heated to a temperature between 500ºC. and 1000ºC., during which operation the carbon precursor material is pyrolyzed to form carbon.

39. (Previously Presented) The process according to claim 38, wherein the pyrolysis process is followed by a milling or deagglomeration treatment.

40. (Previously Presented) The process according to claim 38, wherein the drying is carried out under a protective gas, in air or in vacuo at temperatures of from 50° C. to 200° C., and the pyrolysis is carried out under a protective gas.

41. (Currently Amended) $LiMPO_4$ particles produced by the process of claim 1, wherein said particles have a particle size distribution such that ~~the~~their D90 value ~~for said particle aggregates~~ is less than 3.0μm, and the difference between the D90 value of the particles and the D10 value is no more than 2 μm.

42. (Previously Presented) The $LiMPO_4$ particles of claim 41, wherein the D90 value of said particles is less than 2.0μm.

43. (Canceled) .

44. (Currently Amended) $LiMPO_4$ particles of claim ~~43~~41, wherein the difference between the D90 and the D10 value is less than 1.5μm.

45. (New) $LiMPO_4$ particles of claim 41, wherein the difference between the D90 and the D10 value is less than 1.0μm.

46. (New) $LiMPO_4$ particles of claim 41, wherein the difference between the D90 and the D10 value is less than 0.5μm.